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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/539,421	03/30/2000	Yasuhiro Mitsui	32165-159044	8177
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VENABLE LLP			TRAN, ELLEN C	
P.O. BOX 34385			ART UNIT	
WASHINGTON, DC 20045-9998			PAPER NUMBER	
			2134	
DATE MAILED: 08/25/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/539,421

Applicant(s)

MITSUI, YASUHIRO

Examiner

Ellen C. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 34-117 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 34-117 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is responsive to communication: filed on 9 June 2005, with acknowledgement of original filing date of 30 March 2000 with a foreign priority date of 30 August 1999.
2. Claims 1-33 have been canceled. Claims 34, 35, 43, 44, 49, 52, 53, 61, 62, and 94-109 have been amended. Claims 110-117 have been added.
3. Claims 34-117 are currently pending in this application. Claims 34, 35, 43, 44, 52, 53, 61, and 62 are independent claims. Objection made in last Office Action to claim 109 is removed based on amendment.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 34, 35, 43, 44, 52, 53, 61, and 62, and their subsequent dependent claims 36-42, 45-51, 54-60, 63-117 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. All the independent claims were amended so that the underlined phrase was added: Example Independent claim 61 “An image verifying method comprising: inputting image data which a location information indicates a plurality of regions in said image data for embedding a digital watermark all regions containing a document information”. After reviewing the specification pages 75-80 it is still unclear how applicant is claiming the invention. According to the specification “document information” shows the identification of the document classification identified from the specific part. Therefore the claim would mean

‘An image verifying method comprising of inputting image data which a location information indicates a plurality of region in said image data for embedding a digital watermark all regions containing a showing of the identification of the document classification identified from the specific part’

In the specification as well as the claims the words “classification” and “specific part” are not further explained making the independent claims indefinite. Also the “document information” is only defined as explained above in the specification. This appears to be an unclear translation from a foreign language because it is difficult to discern how the document information is related in the verifying method. The specification indicates that the document information is related to how well the image can incorporate a watermark and the coordinates of the various watermarks on the image.

6. Claims 34, 35, 43, 44, 52, 53, 61, and 62, and their subsequent dependent claims 36-42, 45-51, 54-60, 63-117 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the format database that manages the information such as coordinates, document classification, and specific information for embedding watermark(s). The specific information and document classification should also be clearly defined.

7. To expedite a complete examination of the instant application the claims rejected under 35 U.S.C. 112 above are further rejected as set forth below in anticipation of applicant amending

these claims to place them within the statutory categories of the invention.

Response to Arguments

8. Applicant's arguments with respect to claims 34-117 have been considered but have not been found persuasive.

In response to applicant's argument on pages 17-20, *"The '127 patent does not teach or suggest "an image providing apparatus which defines a location information indicating a plurality of regions in image data for embedding a digital watermark in all region containing a document information among the plurality of regions and providing said image data, in which said digital watermark is embedded based on said location information." Instead the '127 patent teaches selecting blocks of a data stream according to a texture criterion that measures a variation of selected characteristics associated with each data element of the data stream ... Embedding a watermark in this manner does not "embed[] a digital watermark in all regions containing a document information among the plurality of regions".* The Office disagrees with argument. The 112 2nd paragraph rejections were made due to the amendment in the claims, because the definition of "document information" is unclear. Furthermore from the specification page 75 "As shown in Fig. 30, the digital watermark embedding unit 713 inputs the embedding region information and embeds the digital watermark in the designated region in the original image 705. During the embedding, the digital watermark embedding unit 713 uses the image quality information and applies the digital watermark method, which matches the image quality". This image quality information that is used when embedding the watermark has the same meaning as the texture criterion used in reference '127.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language

10. Claims 34-37, 42-46, 49, 50, 52-55, 58, 59, 61, 62, and 66-117 are rejected under 35 U.S.C. 102(e) as being anticipated by Kurowski et al. U.S. Patent No. 6,553,127 (hereinafter ‘127).

As to independent claim 34, “An image processing system comprising:” is taught in ‘127 col. 4, lines 58-60;

“an image providing apparatus which defines a location information indicating a plurality of regions in an image data for embedding a digital watermark in all regions containing a document information among the plurality of regions and providing said image data in which said digital watermark is embedded based on said location information” is shown in ‘127 col. 3, line 54 through col. 4, line 18;

“and an image utilizing apparatus which extracts said digital watermark from said image data provided by said image providing apparatus based on said location information” is disclosed in ‘127 col. 5, lines 55-63;

“and verifies whether a said image data in said desired region, in which said digital watermark is embedded, has been tampered” is taught in ‘127 col. 11, line 65 through col. 12, line 28.

As to independent claim 35, **“An image processing system comprising:”** is taught in ‘127 col. 4, lines 58-60;

“an image providing apparatus which recognizes a format for indicating a plurality of regions in an-image data and provides said image data in which a digital watermark is embedded in all regions containing a document information among the plurality of regions based on said format” is shown in ‘127 col. 3, line 54 through col. 4, line 18;

“and an image utilizing apparatus which recognizes said format of said image data extracts said digital watermark from said regions based on said format” is disclosed in ‘127 col. 5, lines 55-63;

“and verifies whether a-said image data in said desired region in said image data in which said digital watermark is embedded, has been tampered” is taught in ‘127 col. 11, line 65 through col. 12, line 28.

As to dependent claim 36, **“wherein said image providing apparatus provides said image data in. which a different kind of said digital watermark is embedded in a different region in said image data”** is shown in ‘127 col. 8, lines 54-67.

As to dependent claim 37, **“wherein said image providing apparatus provides said image data in which a different kind of said digital watermark is embedded according to an image quality in each region where said digital watermark is embedded”** is disclosed in ‘127 col. 8, lines 54-67.

As to dependent claim 42, “wherein: said image providing apparatus transfers said location information to said image utilizing apparatus; said image providing apparatus embeds said digital watermark in said image data based on said location information to be transferred; and said image utilizing apparatus extracts said digital watermark from said image data based on said location information transferred from said image providing apparatus” is disclosed in ‘127 col. 5 lines 40-63.

As to independent claims 43 and 44, these claims are directed toward the apparatus of methods of 34 and 35; therefore they are rejected along similar rationale.

As to dependent claims 45 and 46, these claims contain substantially similar subject matter as claims 36 and 37; therefore they are rejected along similar rationale.

As to dependent claims 49 and 50, these claims contain substantially similar subject matter as claims 34 and 35; therefore they are rejected along similar rationale.

As to independent claims 52 and 53, these claims are directed toward a recording medium storing programs for the methods of 34 and 35; therefore they are rejected along similar rationale.

As to dependent claims 54 and 55, these claims contain substantially similar subject matter as claims 36 and 37; therefore they are rejected along similar rationale.

As to dependent claims 58 and 59, these claims are directed toward a recording medium storing programs for the methods of 34 and 35; therefore they are rejected along similar rationale.

As to independent claims 61 and 62, these claims are substantially similar to the methods of 34 and 35; therefore they are rejected along similar rationale.

As to dependent claim 66, “wherein a density of said digital watermark is adjusted to a quality of said image data” is taught in ‘127 col. 8, lines 58-67.

As to dependent claim 67, “wherein a data amount of said digital watermark for a character is smaller than one for another type of information in said image data” is shown in ‘127 col. 8, lines 58-67.

As to dependent claims 68-93, these claims contain substantially similar subject matter as claims 66 and 67; therefore they are rejected along similar rationale.

As to dependent claim 94, “wherein said regions include at least one of character information or image information” is taught in ‘127 col. 6, lines 4-48.

As to dependent claim 95, “wherein a density of said digital watermark embedded in a region comprising character information is smaller than a density of said digital watermark embedded in a region comprising image information” is shown in ‘127 col. 8, lines 58-67.

As to dependent claims 96-109, these claims contain substantially similar subject matter as claims 94 and 95; therefore they are rejected along similar rationale.

As to dependent claim 110, “wherein said image processing apparatus further comprises means for storing said document information” is disclosed in ‘127 col. 5, line 64 through col. 6, line 13.

As to dependent claims 111-117, these claims contain substantially similar subject matter as claim 110; therefore they are rejected along similar rationale.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. **Claims 38-41, 47, 48, 51, 56, 57, 60, and 63**, are rejected under 35 U.S.C. 103(a) as being unpatentable over ‘127 in further view of Wong U.S. Patent No. 6,504,941 (hereinafter ‘941).

As to dependent claim 38, **“wherein: said location information for embedding a digital watermark includes a location information of a region for displaying a specific information necessary for detecting a tamper”** is taught in ‘127 col. 11 line 65 through col. 12 line 28 “A validation process may optionally be carried out, depending upon the results of the detection steps. For example, when the watermark is detected, recording of the video stream may be prevented... Alternatively, the video stream playback device may refuse to replay the video stream if the video stream is not validated (e.g., no watermark or tampered watermark present)”;

the following is not taught in ‘127:

“and said image utilizing apparatus extracts said digital watermark with said message digest from said image data based on said location information” however ‘941 teaches “extracting at least a predetermined bit from the watermarked image (step 254);

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calculating a digest of the values using a cryptographic hash function (step 256); combining the hashed output with the image block E.sub.r” in col. 8, lines 25-29;

“and generates a corresponding message digest using said specific information in said provided image data and detects tampering with said image data by comparing said extracted message digest with said corresponding generated message digest” however ‘941 teaches “That is, the digest generated from both image blocks must be identical” in col. 9, line 39-40.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of ’127 that explain how watermarks are inserted and extracted into an image to include authentication method. One of ordinary skill in the art would have been motivated to perform such a modification because a method is needed to determine if image has been modified. As indicated by ‘941 (see col. 2, lines 34 et seq.) “A method of invisible watermarking that can be used both for purposes of ownership verification and authentication, that can detect changes in pixel values as well as image size, and that may be used in public key or alternatively, secret key watermarking systems is needed”.

As to dependent claim 39, this claim is substantially similar to claim 38 and is rejected along similar rationale.

As to dependent claim 40, “wherein said region for embedding said message digest corresponding to said specific information is independent of said region for displaying said specific information necessary for detecting said tamper” is disclosed in ‘941 col. 2 lines 21-29 “The present invention provides an invisible digital watermarking technique that can serve the two purposes of ownership verification and authentication, that can detect changes in pixel

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values as well as image size, and that may be used in public key or alternatively, secret key watermarking systems. The present invention includes a watermark insertion procedure used by the image owner and a corresponding extraction procedure used by the receiver of the image”.

As to dependent claim 41 “wherein: said location information is registered in both of said image providing apparatus and said image utilizing apparatus said image providing apparatus embeds said digital watermark in said image data based on said registered location information; and said image utilizing apparatus extracts said digital watermark from said image data based on said registered location information” is taught in ‘941 col. 8, lines 44-49 “For example, the appropriate watermark may be an image transmitted to the receiver at an earlier time for watermark comparison purposes. If there is deviation between the two watermarks, then the locations of the deviations indicate the regions within the watermarked image that have been changed”.

As to dependent claims 47 and 48, these claims contain substantially similar subject matter as claims 40 and 41; therefore they are rejected along similar rationale.

As to dependent claim 51, this claim is substantially similar to claim 38; therefore it is rejected along similar rationale.

As to dependent claims 56 and 57, these claims contain substantially similar subject matter as claims 40 and 41; therefore they are rejected along similar rationale.

As to dependent claim 60, this claim is substantially similar to claim 38 and is rejected along similar rationale.

As to dependent claim 63 this claim is substantially similar to claim 38 and is rejected along similar rationale.

As to dependent claim 64, **“wherein said digital watermark includes a digital watermark information that is extractable by using a watermark key”** is taught in ‘941 col. 2, lines 59-67 “The previously described insertion and extraction methodology may be used for secret key where the same secret key is used for both watermark insertion and extraction”;

“that includes an authentication information which authenticates said image data provided by an valid provider, and said watermark key of said image data, and wherein said image utilizing apparatus which extracts said digital watermark information from data provided by said image providing apparatus using said watermark key provided by said image providing apparatus” is shown in ‘941 col. 2, lines 21-38 “The present invention provides an invisible digital watermarking technique that can serve the two purposes of ownership verification and authentication, that can detect”;

“verifies whether said watermark key has been tampered or not using said authentication information in said watermark key, verifies whether said image data has been tampered or not using said verified watermark key, and displays said verified image data” is disclosed in ‘941 col. 12, lines 8-20 “FIG. 11 shows a summary of the experimental results summarizing the properties of the secret key verification methodology shown in FIGS. 1A, 1B. Similarly, FIG. 12 shows a summary of the experimental results summarizing the properties of the public key verification methodology shown in FIGS. 9A, 9B.

Referring to FIGS. 11 and 12, one way to accomplish ownership verification is to associate a user key with a watermark so that the desired watermark can only be extracted from a watermarked image with the appropriate user key. If the user performs the watermark

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extraction procedure using either an incorrect key or with an image that was not watermarked, the user obtains an image that resembles random noise”.

As to dependent claim 65, this claim is substantially similar to claim 64; therefore it is rejected along similar rationale.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

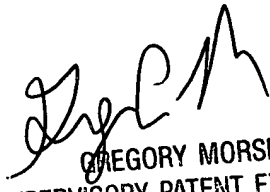
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen C Tran whose telephone number is (571) 272-3842. The examiner can normally be reached from 6:30 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory A Morse can be reached on (571) 272-3838. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ellen. Tran
Patent Examiner
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19 August 2005



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